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(54) Cordless hair dryer

(57) A cordless hair dryer comprises a fan 1 driven by motor 2 powered from batteries (not shown). The fan 1 drives air across the hot surface of catalytic burner 8, which burner 8 is fed with gaseous mixture from storage tank 19 via burner pipe 14. The hair dryer includes electrical ignition of the burner and a pre-fuel feed device which delivers fuel in a smooth and even flow.

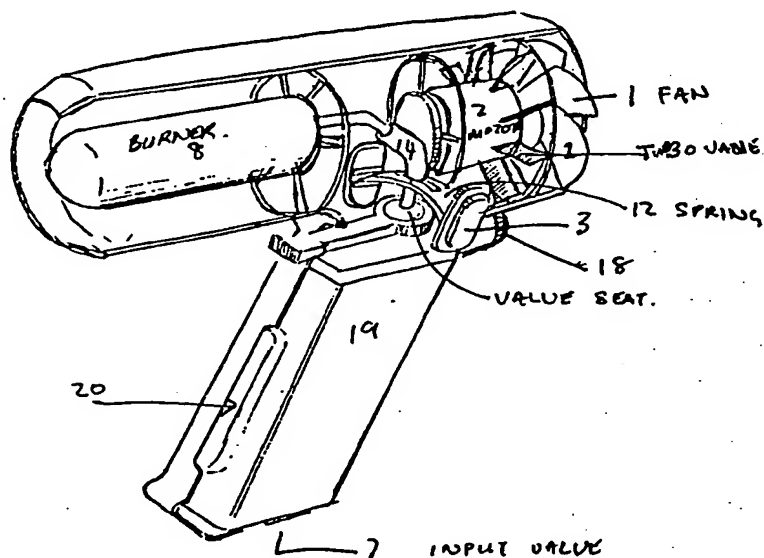


FIG 1

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982. The references to sketches A to D of the drawings in the printed specification are to be treated as omitted under Section 15(2)/15(3) of the Patents Act 1977.

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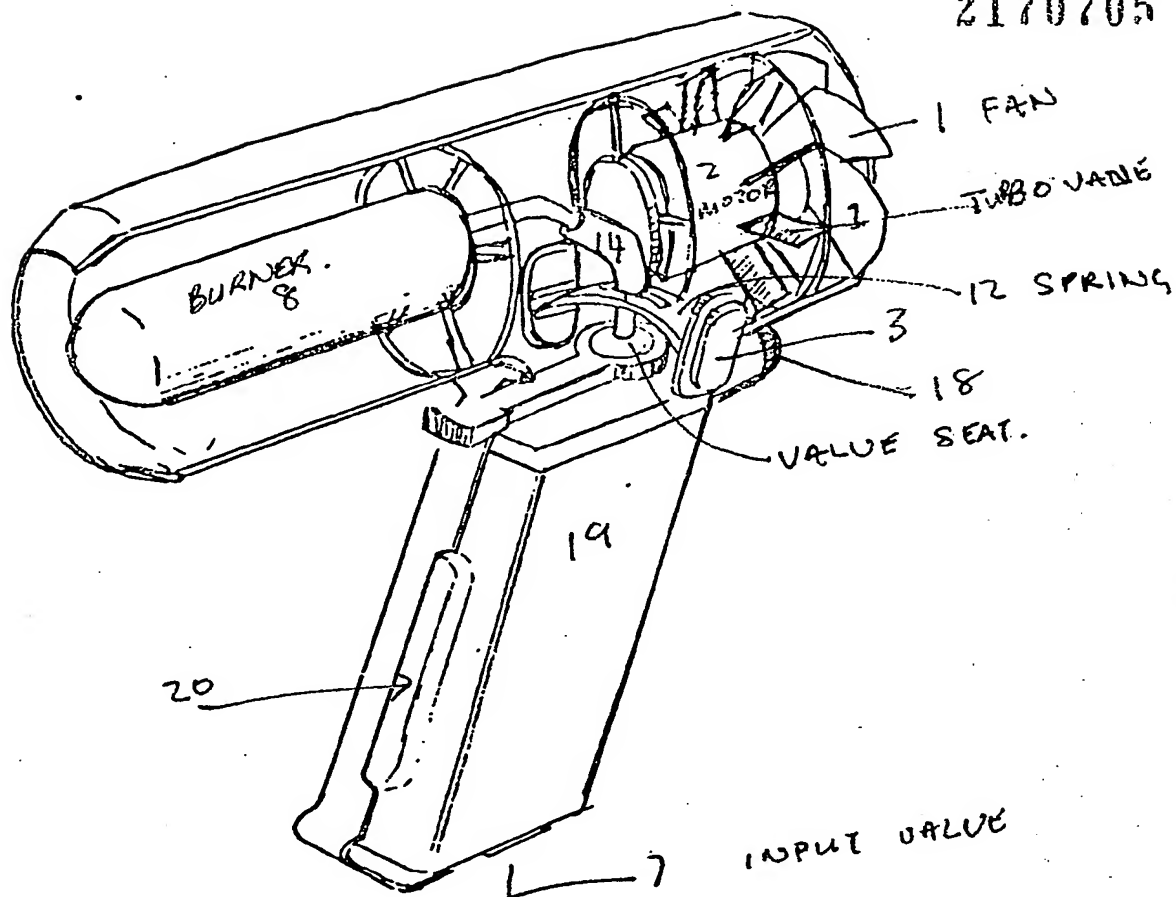
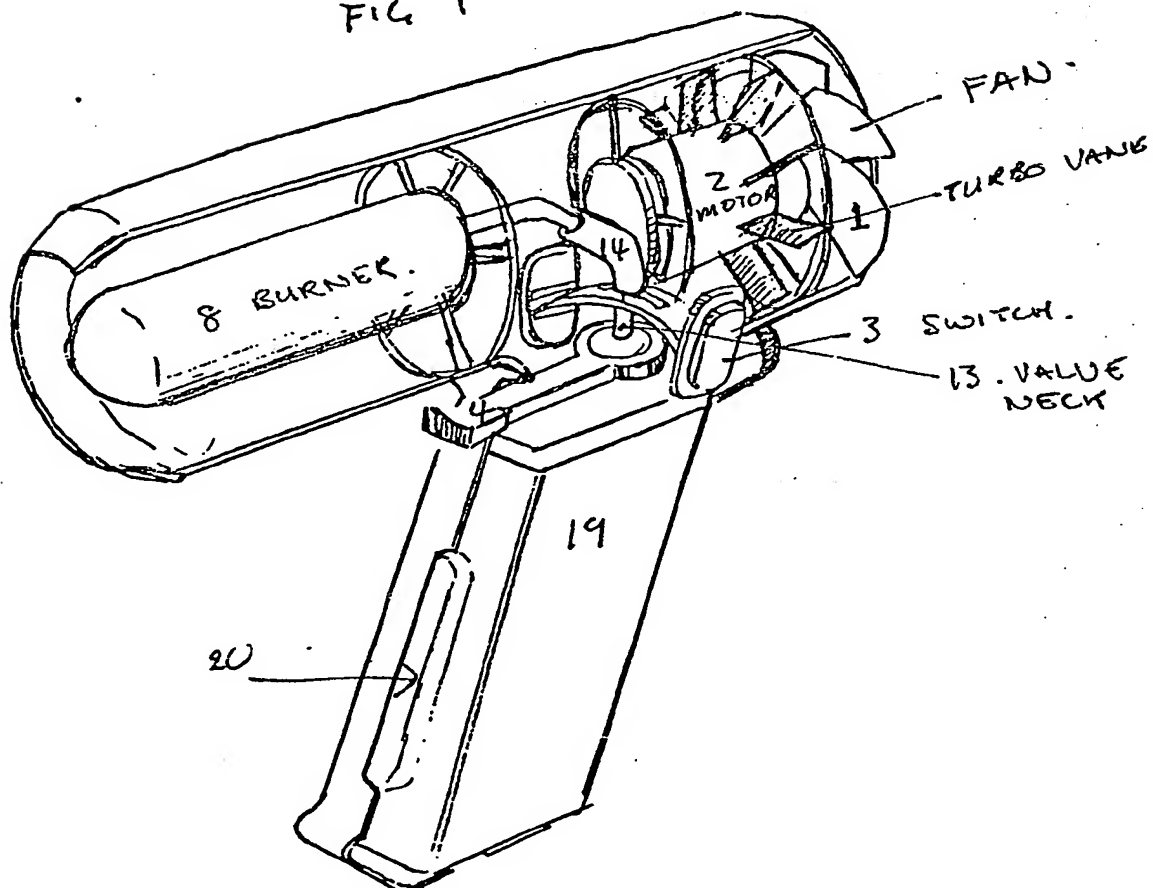


FIG. 1



SPECIFICATION **Cordless hair dryer**

This invention relates to a cordless hair dryer.

- 5 A hair dryer is a well known domestic consumer appliance. It usually comprises of an outer case made of metal or plastic. This outer case usually contains within a fan, motor, and an electric heating element and some form of current switch and a
10 power cable which is usually fixed at one end to the appliance and has a power plug at the other end so as to be able to plug the appliance into a suitable power outlet.

- This kind of "corded" electrical hair dryer is,
15 however, not always convenient as a power outlet may not always be at the location where one may desire to use a hair dryer.

- Improvements in and relating to cordless hair dryer/
20 care products

- This invention relates to cordless hair dryer/care product. The term "Cordless Hair Dryer" as used herein refers to a device which doesn't need electrical connection to a power source for its
25 normal operation but may however be connected should the user require it. The term "Cordless hair dryer" as contained herein shall also be deemed to mean any device which uses an energy cell, be it chemically a wet or dry accumulator, rechargeable or not, being rechargeable from an independent source, as part of its motivating force but shall
30 exclude all forms of prior art type material. The term "electrical" shall as used herein be deemed to mean energy, generated by generator, be it A.C. or D.C. (converted increased, decreased or smoothed in any form). The term "connection" shall as used herein be deemed to mean by wire, fibre optic, compressed
35 air pipe/tube, cable. The term "electrical connection" as used herein shall be deemed to mean any combination of one or other or combined as previously described in any form.

- The term hairdryer/care products shall be deemed to mean any electrical and/or mechanical device which may be used to heat or remove water or
45 moisture from any fibrous growth be it human, animal, mineral, vegetable, synthetic or to form the said into a style natural or un-natural.

- The term hairdryer shall also be deemed to mean as contained herein a device that may be used in the
50 electrical/electromechanical industry that may be used to expand or contract tubing used for fabrication, insulation-packaging, and packaging or associated purposes. It shall also be deemed to mean any device, be it electrical or mechanical, that is capable of moving air, or causing heat, but not
55 forming or claiming prior art.

- The invention also relates to a hairdryer/styler/air blower/air heater that may be powered by energy cells not necessarily confined to batteries. These
60 energy cells/batteries may be connected to a motor or driving device if electrical, but may not connect if the device is purely mechanical and may or may not connect if the device is electromechanical. The hair dryer utilises one or more forms of power and not
65 necessarily singularly. The motivating device, for

example commonly known as the fan, is driven, in this instance, for example only by a device commonly known as a "motor" which in turn is powered by the energy cells/batteries as previously described, this may or may not be contained within the housing of the hair dryer or may be partly within and partly without. The fan motivates the surrounding gaseous environment i.e. the air, and causes it to move in one or more direction(s). If this
70 gaseous mixture or air is directed over or through some hot device element then the temperature of this gaseous mixture or air is changed and for example may collect some of the heat along its path.

- 80 This hot gaseous mixture or air may be directed by means of vane(s), pipe(s) or nozzle(s).

- This gaseous mixture or air, when motivated by the fan, may also be directed by means of vanes arranged in such a way as to direct the gas or air in desired directions.

- 85 The hot device or element that the gaseous mixture or air is passed over or through may be in the form of a device or element the temperature of which is generated by a gaseous mixture, for example say "liquid petroleum gas" or any of the hydrocarbon gases. This gaseous mixture may be in a form of container(s) that may be pressured and when this gaseous mixture is expired via a valve/tap/release mechanism it may be allowed to pass
90 through a pipe and or pipes into a chamber with one or more orifice. The gas may still be under some pressure and will try to expand and exit the one of the orifice(s). The storage tank(s) of this cordless hair dryer is filled with a gaseous mixture via a simple input device commonly known as a "valve" which may be conveniently located. For example in this case, shown as No. 7 in Fig. 1. However it's location is not a specific requirement to the working of the said invention.

- 105 The input devices path may lead to a tank or reservoir(s) contained within the hair dryer, or may also be connected by means of a connecting pipe. This gaseous mixture may be under pressure. Should the one two or more on/off buttons No. 3 Fig. 1 situated on both sides of the handle be pressed at the same time, then the tube of the valve (13) Fig. 2 rises, allowing gas to travel along the burner pipe No. (14) Fig. 2 and into the burner No. (8) Fig. 2.

- 115 The burner is covered at both ends, except for a hole at one or more ends to allow the burner pipe(s) to be inserted and this gaseous mixture is allowed to pass from inside of the burner, through the orifice(s) to the outside surface. The gaseous
120 mixture may now be escaping from the surface of the burner and may be passed through a wool type material that contains particular types of metal fragments or particles causing a catalytic burning action to take place. By depressing the ignition
125 button(s) (No. 18) which contains a button type energy cell, a small filament(s) not shown in Fig. 2 glows. This filament(s) is situated in close proximity to the burner.

- When the burner reaches the desired temperature
130 as sensed by a thermostat automatically or semi-

automatically, the fan No. (1) Fig. 2 is motivated by a motivating force being applied by the motor No. (2). This moves the air towards and across the burner. As the air is passed across the burner, so the temperature of the air rises.

The amount of rise/fall in air temperature can be controlled by controlling the amount of gas that is allowed to emit from the valve by the temp control lever (4) which is located on the valve seat.

An innovative step is also embodied in the design of the spring/switch (12), i.e. the rise and fall mechanism by cutting a slot having about the same width as the valve neck and the slot length by no more than half the sum total of the travel of the on/off buttons (3). When only one button is pressed no operation is possible. However when both buttons are pressed, the height of the spring is increased so as to raise the valve neck, therefore opening the valve and causing a regulated amount of gaseous mixture to flow.

Improvements in and relating to haircare appliances

This invention relates to a cordless hair care product previously requiring connection to an electrical outlet. This invention, in its normal operation requires no connection to an electrical outlet, but may however be connected to one should the user require it.

The temperature is regulated from ambient to hot (i.e. more than surrounding temperature) by the temp control No. (4). It controls the regulation of the on/off valve No. (13) which is connected to the storage tank (19). The storage tank (19) contains a gaseous mixture. Connected to (19) is an input valve (7). By means of this valve (7), the tank may be refilled with a gaseous mixture and the level of this gaseous mixture may be seen by the fuel gauge (20). When both on/off buttons (3) are depressed, then the valve (13) is lifted allowing gas to enter the connector tube (15) the burner pipe (14) and the catalytic burner (8).

The gaseous mixture permeates through the catalytic burner to the outside surface. By depressing the ignition button (18) which contains a small electrical power source, current is sent via cable/metal strip(s) to a small filament in close proximity to the burner (8). The filament on receiving the electrical current, gets hot and glows, causing flameless ignition to the catalytic burner (8). When the burner (8) reaches the desired temperature, a small temperature sensitive switch again in close proximity to the catalytic burner

makes electrical connection between batteries (not shown) and motor (2) causing the fan (1) to rotate. This in turn causes air to move over the burner (8).

The air is directed in a forward direction by the turbo vanes (11).

CLAIMS

1. A cordless hair dryer comprising of a battery driven motor with the battery being replaceable and or rechargeable.

2. A cordless hair dryer as in claim (1) containing a user variable heat control and air flow control.

3. A corded hair dryer as in claim (2) which does not require the use of an AC wall socket outlet for its power.

4. A cordless hair dryer as in claim (3) utilising a catalytic burner as its main heating source.

5. A cordless/corded hair dryer as in any succeeding or preceeding claims utilising an electrical ignition system.

6. A cordless hair dryer as in claim (5) with a user variable gas flow control incorporating a capillary action pre-valve feed.

7. A corded hair dryer as in claim (6) that can be housed in a carrying case which may also serve as a housing for both energy cell(s) and fuel storage.

8. A cordless hair dryer as in claim (7) wherein spaces are provided for a spare fuel cartridge, spare energy cells, brush, mirror and comb, and the exclusion or inclusion in any combination would not constitute a departure from the claims.

9. A cordless/corded hair dryer as claimed in all preceeding and succeeding claims, that may include a double action safety on/off switch.

10. A corded hair dryer as claimed in claim (9) that utilizes a double purpose connexion tube/cable.

11. A cordless/corded hair dryer as claimed in all preceding claims that incorporates a "straw" to perform the functions as hereinafter described within the confines of the patent.

N.B. (a) Any combination, inclusion or exclusion of any claim or part thereof would not necessarily depart from the spirit and theme of this invention.

(b) It should be noted that sketches (A) to (D) showing alternative arrangements and constructions, form an integral part of this patent, and any deviation, and or combination/deletion of any method or arrangement shown would not necessarily depart from the theme of this invention.